

## **IN THE CLAIMS**

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Previously presented) A method in a data processing system for processing instructions, the method comprising:

responsive to receiving an instruction in an instruction cache in a processor in the data processing system, determining whether an indicator associated with the instruction is present;

responsive to determining that an indicator associated with the instruction is present, enabling counting of occurrences of at least one selected event that is associated with execution of the instruction;

counting the occurrences of the at least one selected event during the execution of the instruction if counting is enabled for the instruction; and

responsive to determining that an indicator associated with the instruction is not present, executing the instruction without enabling counting of the occurrences of the at least one selected event.

2. (Canceled)

3. (Previously presented) The method of claim 1, wherein the counting step comprises: incrementing a counter associated with the indicator for each occurrence of the at least one selected event.

4. (Canceled)

5. (Previously presented) The method of claim 1, wherein the indicator is stored in a performance instrumentation shadow cache and wherein the processor checks the performance instrumentation shadow cache to determine whether the indicator associated with the instruction is present.

6. (Previously presented) The method of claim 1, wherein the instruction is received in a bundle in the instruction cache in the processor and wherein the indicator comprises at least one spare bit in a field in the bundle.
7. (Original) The method of claim 1, wherein the indicator is a separate instruction.
8. (Previously presented) The method of claim 1, wherein an event in the at least one selected event includes at least one of an entry into a module, an exit from a module, an entry into a subroutine, an exit from a subroutine, an entry into a function, an exit from a function, a start of input/output, and a completion of input/output, the execution of the instruction.
9. (Previously presented) The method of claim 1, wherein determining whether an indicator associated with the instruction is present comprises:
  - determining, by the instruction cache, whether the indicator is present in a field within the instruction.
10. (Previously presented) The method of claim 1, wherein the enabling step comprises:
  - sending a signal to a performance monitor unit, wherein the performance monitor unit counts occurrences of the at least one selected event that is associated with execution of the instruction using a counter.
- 11-14. (Canceled)
15. (Previously presented) A method in a data processing system for monitoring access to data, the method comprising:
  - identifying a memory location associated with an indicator; and
  - enabling counting of occurrences of at least one selected event that is associated with accesses to the memory location, wherein enabling counting of occurrences of at least one selected event that is associated with accesses to the memory location comprises:
    - sending a signal from a data cache to a performance monitor unit to enable the performance monitor unit to count the occurrences of the at least one selected event that is associated with accesses to the memory location; and
    - incrementing a counter in the performance monitor unit for each occurrence of the at least one selected event.

16. (Canceled)

17. (Previously presented) The method of claim 15, wherein an event in the at least one selected event includes access to the memory location.

18-25. (Canceled)

26. (Currently amended) A method in a data processing system for processing instructions, the method comprising:

responsive to receiving an instruction in an instruction cache in a processor in the data processing system, determining whether an indicator associated with the instruction is present

responsive to determining that an indicator associated with the instruction is present, enabling counting of occurrences of at least one selected event that is associated with execution of the instruction, wherein the enabling comprises sending an enabling signal to a performance monitor unit, wherein the performance monitor unit is enabled to count the occurrences of the at least one selected event that is associated with execution of the instruction using a counter, and wherein the at least one selected event includes at least one of an entry into a module, an exit from a module, an entry into a subroutine, an exit from a subroutine, an entry into a function, an exit from a function, a start of input/output, and a completion of input/output;

counting the occurrences of the at least one selected event during the execution of the instruction when counting is enabled for the instruction; and

responsive to determining that an indicator associated with the instruction is not present, executing the instruction without enabling counting the occurrences of the at least one selected event.